

REMARKS

Claims 1, 4-17 and 19-25 are pending in this application. For purposes of expedition, dependent claim 19 has been canceled without prejudice or disclaimer, and base claims 117 and 22 have been amended to incorporate limitations of claim 19 in an effort to place the instant application in condition for allowance or for appeal. Accordingly, entry of the foregoing amendments is proper under 37 C.F.R. §1.116(b) because those amendments simply incorporate from a dependent claim into independent claims. No new issues are raised, no further search is required, and the foregoing amendments are believed to remove the basis of the outstanding rejections and to place all claims in condition for allowance.

As a preliminary matter, Applicants respectfully petition from the premature designation of Paper No. 20060416 dated on April 19, 2006, as "final" Office action, request withdrawal of the designation of "final", for complete Office Action and restarting of period for response, and as reasons discussed herein below.

M.P.E.P. §707.07(a) defines a **premature final Office action** as one:

"where the examiner introduces a new ground of rejection **not necessitated by amendment of the application by applicant**".

Further, M.P.E.P. §707.07(a) also describes that:

"A second or any subsequent action on the merits in any application ... should **not** be made final *if it includes a rejection, on prior art not of record, of any claims amended to included limitations which should reasonable have been expected to be claimed*. See M.P.E.P. §904. For example, one would reasonably expect that a rejection under 35 U.S.C. §112 for the reason of incompleteness would be responded to by an amendment supplying the omitted element."

In the present situation, the Examiner has clearly instituted **new** rejection of claims 1, 4, 7, 8, 10, 11, 17, 19, 20, 22 and 23 under 35 U.S.C. §103 as being unpatentable over Codama et al., U.S. Patent No. 6,307,317. Under M.P.E.P. §707.07(a) and in contrast to the Examiner's assertion, the Examiner cannot raise a new ground of rejection **not necessitated by Applicants' Amendment** filed on February 28, 2006, and make the Office Action "final", particularly, when claim 1 had only been amended to correct a single typographical error, and dependent claims 24-25 had only been amended to avoid potential §112 issues. Therefore, in view of the foregoing facts and explanations, Applicants respectfully request the Examiner to (1) withdraw

the designation of Paper No. 2006 mailed on April 19, 2006 as a "final" Office action; (2) reissue another Office Action as required by M.P.E.P. §707.07(f) be issued, and that the period for response be restarted; and (3) grant such and other relief as justice may require.

Turning now to the substance of the "premature" Office Action, claims 1, 4, 7, 8, 10, 11, 17, 19, 20, 22 and 23 have now been rejected under a different statutory provision, 35 U.S.C. §103(a) as being unpatentable over Codama et al., U.S. Patent No. 6,307,317 for reasons stated on pages 2-4 of the Office Action (Paper No. 20060416). However, on page 3 of the Office Action (Paper No. 20060416), the Examiner appears to cite another secondary reference, Miyaguchi et al., presumably, U.S. Patent No. 6,297,589 to support the combination rejection. For example, in support of the rejection of base claims 1, 17 and 22, the Examiner asserts that Codama '317 discloses an EL device comprising, *inter alia*:

"a substrate (1), a first electrode unit comprising first electrodes (5) formed on the substrate, first electrode terminals (not shown but required to drive the display, Column 1, lines 39-43) connected to the respective first electrodes, a second electrode unit comprising second electrodes (4) formed in an orthogonal direction with respect to the first electrodes over the first electrodes (see Figs. 2 and 3), and second electrode terminals (2,3) connected to the respective second electrodes, an emission area formed where the first electrodes intersect the second electrodes, an EL layer (7) disposed between the first electrodes and the second electrodes in the emission area; an inter insulating layer (6, layer contacting left side of electrode 5 in Fig. 3) provided under the EL layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes, and an outer insulating layer (6, layer contacting right side of electrode 5 in Fig. 3) between the emission area and the second electrode terminals;

wherein the outer insulating layer comprises an insulating material formed to contact at least an edge of the second electrode terminals facing the emission area to reduce a steepness of a step between the second electrode terminal and the substrate (see Fig. 3)."

The Examiner then admits that Codama '317 fails to disclose the orthogonal relationship between the first electrodes and the second electrodes, but cites column 2, lines 49-62 of Miyaguchi '589 for allegedly disclosing the orthogonal arrangement between the first and second electrodes in order to arrive at Applicants' base claims 1, 17 and 22.

Again, the Examiner's analysis of Codama '317 and Miyaguchi '589 is factually incorrect. As previously discussed, key features of Applicants' base claims 1, 17 and 22 are **not** disclosed or suggested anywhere by Codama '317 or Miyaguchi '589, whether taken in combination or

individually. Therefore, Applicants traverse the rejection and respectfully request the Examiner to reconsider and withdraw this rejection for the following reasons.

Applicants' base claims 1, 17 and 22, as previously discussed and now amended, are directed generally to an EL device, as shown, for example, in FIG. 5 and FIG. 6, in which first electrodes (52) and their terminals (62) are **orthogonal** with respect to second electrodes (54) and their terminals (64), and an EL layer is disposed on an emission area between the first electrodes (52) and the second electrodes (54). In addition, an inter insulating layer (56) is formed under the EL layer to cover spaces between each of the lines of the first electrodes (52) and **an edge portion of a top surface of each of the lines of the first electrodes (52)**. Likewise, an outer insulating layer (66) is formed to cover the edge of the second electrode terminals facing the emission area in order to reduce a steepness of a step between the second electrode terminals and the substrate. This way, any possibility of the second electrodes (54) being disconnected at the edge and electrostatic shock resulting therefrom can be advantageously prevented. Likewise, connection between the second electrodes (54) and their terminals (64) can be enhanced, and rectifying characteristics of an EL device can be improved. See paragraphs [0041], [0044], and [0059] of Applicants' specification.

In contrast to Applicants' base claims 1, 17 and 22, Codama '317, as a primary reference, discloses a different type of organic EL devices having a completely different electrode structure designed to address a different problem. Specifically, as shown in FIG. 3, the electrode structure of Codama '317 simply includes an underlying layer 2 formed on a substrate, an electrode layer 3 formed on the underlying layer 2, and an electron injecting electrode layer 4 deposited on the electrode layer 3 and the underlying layer 2, as shown in FIG. 4. In addition, an organic layer 7 is interposed between the electrode injecting electrode layer 4 and the electrode layer 3. However, as described on column 2, lines 3-10 of Codama '317,

**"As a consequence, when the electron injecting electrode layer 4 is deposited after the deposition of the organic layer 7, contact between the electrode layer 3 and the electron injecting electrode layer 4 may become insufficient due to the high resistance of the surface portion of the electrode layer 3, and such insufficient contact results in faulty connection and failure in the full drive of the pixels."**

The problem as identified by Codama '317 is addressed by patterning the electrode layer 3 in comb shape such that the underlying layer 2, as shown in FIG. 1 and FIG. 2 is partly left uncovered. As a result, electric connection with the overlying electron injecting electrode layer 4

is thereby improved. This is because the electron injecting layer 4 is in contact with both of the electrode layer 3 and the underlying layer 2, and electric connection is still secured between the electron injecting layer 4 and the underlying layer 2 which is more resistant to surface oxidation.

As is evident from Codama '317, there is **no** disclosure of any relationship between "first electrodes" and "second electrodes", notwithstanding an **orthogonal relationship** as expressly defined in Applicants' base claims 1, 17 and 22, as the Examiner has expressly recognized. More importantly, there is **no** disclosure anywhere from Codama '317 of the structural relationship between "an inter insulating layer" and "an outer insulating layer" in the manner as defined in Applicants' base claims 1, 17 and 22, that is, forming inter insulating layer (56) to cover spaces between each of the lines of the first electrodes (52) and an edge portion of a top surface of each of the lines of the first electrodes (52); and forming an outer insulating layer (66) to cover the edge of the second electrode terminals facing the emission area in order to reduce a steepness of a step between the second electrode terminals and the substrate.

Nevertheless, the Examiner first cites element 6 to cover both Applicants' claimed "inter insulating layer" and "outer insulating layer". However, the Examiner's citation is completely misplaced.

Element 6 of Codama '317, as previously discussed and the Examiner has **not** addressed Applicants' rebuttal of his characterization, only refers to a passivation film, and as described on column 6, lines 28-31, is deposited to surround the ITO electrode layer 5 (including both sides of the ITO electrode layer 5), at least one organic layer 7, and an electron injecting layer 4 formed on the substrate 1, as shown in FIG. 3.

Again, no where in FIG. 3 and corresponding text of Codama '317 is there any element that can be used to read on Applicants' claimed "inter insulating layer" and "outer insulating layer" that are formed to perform the functions as expressly defined in Applicants' base claims 1, 17 and 22.

In addition, the Examiner further cites column 2, lines 49-62 of Miyaguchi '589 for allegedly disclosing the orthogonal arrangement between the first and second electrodes in order to arrive at Applicants' base claims 1, 17 and 22. Column 2, lines 49-62 of Miyaguchi '589 refers to the use of "metallic lines L1 and L2 formed in a direction perpendicular to the transparent electrode lines R1, G2, B1, R2, G2, B2." However, there is **no** reason or motivation for one skilled in the art to incorporate this feature into an electrode structure of Codama '317, particularly, when doing so would undoubtedly undermine or defeat the very purpose of Codama

'317.

In order to establish a *prima facie* case of obviousness under 35 U.S.C. §103, the Examiner must show that the prior art reference (or references when combined) must teach or suggest all the claim limitations, and that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings, provided with a reasonable expectation of success, in order to arrive at the Applicants' claimed invention. The requisite motivation must stem from some teaching or suggestion to make the claimed combination must be found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2143. In other words, all the claim limitations must be disclosed or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." ACS Hospital System, Inc v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The Examiner must point to something in the prior art that suggests in some way a modification of a particular reference or a combination of references in order to arrive at Applicants' claimed invention. Absent such a showing, the Examiner has improperly used Applicants' disclosure as an instruction book on how to reconstruct to the prior art to arrive at Applicants' claimed invention. Furthermore, any deficiencies in the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". See In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002).

In the present situation, both Codama '317 and Miyaguchi '589 fail to disclose and suggest key features of Applicants' base claims 1, 17 and 22. As a result, even if the orthogonal arrangement of the two electrode lines as disclosed by Miyaguchi '589 is incorporated into Codama '317 in the manner suggested by the Examiner, the proposed incorporation still does not arrive at Applicants' base claims 1, 17 and 22. Therefore, Applicants respectfully request that the rejection of Applicants' base claims 1, 17 and 22 and their respective dependent claims 4-8, 10-14, 19-23 and 25 be withdrawn.

Separately, claims 1, 4-8, 10-14, 17, 19-23 and 25 have been finally rejected under 35 U.S.C. §103 as being unpatentable over Miyaguchi et al., U.S. Patent No. 6,297,589, in view of Tadokoro et al., EP 1022931 for reasons stated on pages 4-7 of the Office Action (Paper No. 20060416). Again, in support of the rejection of base claims 1, 17 and 22, the Examiner asserts

that Miyaguchi '589 discloses an EL device comprising substantially all the elements, including an inter insulating layer (2, Fig. 2A) provided under the EL layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes, and an outer insulating layer (2, portion of layer in the periphery, outside the emission area.)

The Examiner then admits that Miyaguchi '589 is silent regarding the limitation of "second electrode unit comprising electrode terminals, wherein the outer insulating layer is formed to contact at least an edge of the second electrode terminals facing the emission area." However, the Examiner cites column 4, lines 10-23 and column 9, lines 18-32 of Tadokora '931 for allegedly disclosing the missing feature.

However, the Examiner's assertion is factually incorrect. As previously discussed, an inter insulating layer of Applicants' base claim 1, for example, [also see claims 17 and 22, and FIG. 5 and FIG. 6] is provided under the electroluminescent layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes. Similarly, an outer insulating layer of Applicants' base claim 1, [also see claims 17 and 22, shown in FIG. 5 and FIG. 6] is formed to cover the edge of the second electrode terminals facing the emission area in order to reduce a steepness of a step between the second electrode terminals and the substrate. This way, any possibility of the second electrodes (54) being disconnected at the edge and electrostatic shock resulting therefrom can be advantageously prevented. Likewise, connection between the second electrodes (54) and their terminals (64) can be enhanced, and rectifying characteristics of an EL device can be improved. See paragraphs [0041], [0044], and [0059] of Applicants' specification.

In contrast to Applicants' base claims 1, 17 and 22, no where in Miyaguchi '589 is there any disclosure of any "inter insulating layer (2, Fig. 2A) provided under the EL layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes, and an outer insulating layer (2, portion of layer in the periphery, outside the emission area)" as alleged by the Examiner.

In FIGs. 2A-2B of Miyaguchi '589, element 2 refers to an insulating layer, as described on column 3, lines 9-21, as:

"formed to cover the entire surface of the regions of the base plate where the transparent electrode lines are formed, except the opening 3. Therefore, except the opening 3, the regions where the transparent electrode lines Rn, Gn, Bn and the metallic electrode lines Lm cross each other are entirely covered with

the insulating layer 2."

Again, no where in the cited portion of Miyaguchi '589 of Applicants' claimed "inter insulating layer (2, Fig. 2A) provided under the EL layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes, and an outer insulating layer (2, portion of layer in the periphery, outside the emission area."

Similarly, no where in the alleged column 4, lines 10-23 and column 9, lines 18-32 of Tadokora '931 is there any disclosure or suggestion of Applicants' claimed "outer insulating layer 6 between the emission area and the second electrode terminals ... to contact at least an edge of the second electrode terminals facing the emission area to reduce a steepness of a step between the second electrode terminal and the substrate" as expressly defined in Applicants' base claims 1, 17 and 22.

Specifically, Tadokora '931, as a secondary reference, only discloses an EL device having device having a transparent electrode layer provided with display electrodes in the form of segments that are selectively activated to represent desired characters, a back electrode, and an emissive layer between the transparent electrode and the back electrode. (Tadokoro '931 paragraph [0001]). As shown in FIG. 2, the segments of the transparent electrode layer 2 disclosed in Tadokoro '931 consist of the elements of a digital numeric display. The back electrode 6 is a film of Al or Cr as a sheet. (see for example, paragraphs [0005]-[0007] and [0031]-[0033]).

The cited column 4, lines 10-23 of Tadokora '931 simply refers to the deposition of an intermediate dielectric layer (4), as shown in FIG. 1, to cover the whole surface of the transparent electrode layer 2, except for locations where display electrodes (2) and terminals (22) are present. Likewise, the cited column 9, lines 18-32 of Tadokora '931 refers to the same dielectric layer (4) made of dielectric material having a color that has excellent ability of block light such as black, and is used to cover the whole surface of the transparent electrode layer 2, except for locations where display electrodes (2) and terminals (22) are present, as described in column 4, lines 10-23.

Again, no where in the cited column 4, lines 10-23 and column 9, lines 18-32 of Tadokora '931 is there any disclosure or suggestion of Applicants' claimed "outer insulating layer 6 between the emission area and the second electrode terminals ... to contact at least an edge of the second electrode terminals facing the emission area to reduce a steepness of a step"

between the second electrode terminal and the substrate" as expressly defined in Applicants' base claims 1, 17 and 22. As a result, Tadokoro '931 does not remedy the noted deficiencies of Miyaguchi '589 in order to arrive at Applicants' base claims 1, 17 and 22.

Nevertheless, on page 8 of the Office Action (Paper No. 20060416), the Examiner asserts that Applicants' arguments are not persuasive. According to the Examiner,

"[T]he reference to Miyaguchi discloses an intermediate insulating layer having a inter section located between and separating the plurality of parallel spaced-apart electrode lines, and further discloses an outer section of the insulating layer located at an outside peripheral area where the electrode terminals would be located."

However, the Examiner's assertion belies the specific of Applicants' base claims 1, 17 and 22. In the present situation, both Miyaguchi '589 and Tadokoro '931 fail to disclose and suggest key features of Applicants' base claims 1, 17 and 22. As a result, even if Tadokoro '931 is incorporated into Miyaguchi '589 in the manner suggested by the Examiner, the proposed incorporation still does not arrive at Applicants' base claims 1, 17 and 22. Therefore, Applicants respectfully request that the rejection of Applicants' base claims 1, 17 and 22 and their respective dependent claims 4-8, 10-14, 19-23 and 25 be withdrawn.

Lastly, dependent claims 9, 15, 16 and 24 have been rejected under 35 U.S.C. §103 as being unpatentable over Miyaguchi-Tadokoro as applied to claims 1, 7 and 23 above, and further in view of Okuyama et al., U.S. Patent No. 6,531,815. Since this rejection is based on the correctness of the rejection of Applicants' base claims 1, 7 and 23, Applicants respectfully traverse this rejection for the same reasons discussed.

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC office at (202) 216-9505 ext. 232.

INTERVIEW:

In the interest of expediting prosecution of the present application, Applicants respectfully request that an Examiner interview be scheduled and conducted. In accordance with such interview request, Applicants respectfully request that the Examiner, after review of the present Amendment, contact the undersigned local Washington, D.C. attorney at the local Washington,

D.C. telephone number (202) 216-9505 ext. 232 for scheduling an Examiner interview, or alternatively, refrain from issuing a further action in the above-identified application as the undersigned attorneys will be telephoning the Examiner shortly after the filing date of this Amendment in order to schedule an Examiner interview. Applicants thank the Examiner in advance for such considerations. In the event that this Amendment, in and of itself, is sufficient to place the application in condition for allowance, no Examiner interview may be necessary.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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